

Amendments to the Specification:

On page 1, before the heading “Background of the Invention,” add the following paragraph:

--This patent is a continuation of U.S. Serial No. 10/334,882, filed December 31, 2002, which is incorporated by reference herein in its entirety.--

Please replace the paragraph beginning on page 1, line 17 with the following rewritten paragraph:

-- One such lithographic process is deep ultraviolet lithography which is currently used for most microchip manufacture. Depending of the specific lithography process used, the deep ultraviolet lithography process typically operates at a wavelength of 248 nanometers and utilizes lenses to illuminate a design pattern (e.g., a mask or reticle ~~reticle~~) allowing throughput light to form images on the substrate wafer. Other deep ultraviolet lithographic techniques are being developed with shorter wavelengths of 193 and 157 nanometers. --

Please replace the paragraph beginning on page 23, line 6 with the following rewritten paragraph:

-- A condenser system including a first series of mirrors 608 (collectively referred to as condenser mirrors 608) may be included to redirect the output light 606 to illuminate a design pattern on a reticle ~~reticle~~ 610 at an angle to the optical axis. The condenser mirrors 608 are generally used instead of the lenses commonly used with other lithographic exposure systems, because of the drawbacks described above with respect to the use of lenses with EUVL. However, other ways of illuminating the reticle ~~reticle~~ 610 at an angle to the optical axis may be used, in addition to or as an alternative to redirection reflectors 608. For example, as described above with respect to Fig. 16, the paraboloid sections of the reflecting objectives may be pitched forward or backward, while maintaining focal point alignment. By

pitching the paraboloid sections of the output reflecting objective forward, the output light 606 is directed to converge towards the optical axis and illuminate the reticle ~~reticle~~ 610 at an angle to the optical axis. Alternatively, the condenser system may include a condenser lens that may be used to direct the output light 606 onto the reticle ~~reticle~~ 610 for some wavelengths in the deep ultraviolet spectrum without incurring the drawbacks associated with EUVL, though the condenser mirrors 608 may still be used with deep ultraviolet lithography.

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Please replace the paragraph beginning on page 23, line 24 with the following rewritten paragraph:

-- The reticle ~~reticle~~ 610 generates diffraction images symmetrical about the optical axis from the illumination of the output light 606. A second series of mirrors 612 (collectively referred to as projection mirrors 612), or other reflective projection system, focus the diffracted image onto a substrate wafer 614. The projection mirrors 612 capture and focus the non-diffracted order (i.e., 0th order) and at least one of the higher diffraction orders (e.g., ± 1 st orders) from each diffracted beam of the output light 606 in order to resolve the image on the substrate wafer 614. In order to compensate for any shift in the image on the substrate wafer 614, the projection system captures and reflects diffraction orders that are symmetrical to each other about the optical axis. That is, for each non-diffracted order and a higher diffraction order of a particular beam (e.g., 0th and +1st orders), the non-diffracted order and a higher diffraction order of a beam (e.g., 0th and -1 orders) symmetrical to the first beam are also captured and reflected by the projection mirrors 612. Other projection systems may be able to capture more than the first order of the higher diffraction orders. As with the condenser mirrors 608 above, the projection mirrors 612 are used to accommodate wavelengths used with EUVL. However, with deep ultraviolet lithography wavelengths, a projection lens may be used without the drawbacks associated with EUVL. --

Please replace the paragraph on page 34, under the heading “Abstract of the Disclosure,” with the following rewritten paragraph:

-- Methods and apparatuses for shaping an illumination pattern for off-axis lithography are disclosed. A disclosed apparatus includes a first and second reflecting objective. The first reflecting objective includes a first reflective surface that reflects input light having an on-axis illumination pattern through a first focal point. The second reflecting objective includes a second reflective surface that receives the reflected light through the first focal point and through a second focal point aligned with the first focal point, and reflects the reflected light through an output end as output light having [[in]] an off-axis illumination pattern. A disclosed method includes receiving collimated light with a conventional illumination pattern centered on an optical axis, symmetrically reflecting the collimated light in multiple directions away from the optical axis and reflecting the reflected light to create output light having an off-axis illumination pattern symmetrical about the optical axis. --